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(19)(CA) **APPLICATION FOR CANADIAN PATENT** (12)

(54) RingMaster

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(71) Same as inventor

(57) 3 Claims

Notice: This application is as filed and may therefore contain an incomplete specification.

ABSTRACT:

Telephone handsets alert their owner/operators to the presence of an incoming telephone call by producing a distinctive sound commonly referred to as the ring. The tonality of this ring is typically engineered by the handset's manufacturer, on a model by model basis, to be a single, specific sound. The ring's duration, however, is fixed by industry practice to approximately two seconds in length. In this invention, the ring is recordable and programmable, both in its tonality and its duration, by the owner/operator, and many such rings can be recorded and maintained at any given time by the invention in its memory bank, for eventual play back, when an incoming telephone call is detected. Furthermore, any ring in the invention's memory bank may be expressly assigned to only play back when the incoming telephone call is determined to have originated from a specific caller's telephone number. Additionally, any ring in the invention's memory bank may also be transmitted by the invention to the calling party once the owner/operator has responded to the incoming telephone call by placing the handset in an off-hook condition.

SPECIFICATION:

This invention relates to a device usually referred to as a telephone, a device which is used by its owner/operator to communicate with other individuals who are not presently within earshot. For clarity's sake, the owner/operator of such a device will be occasionally be referred to in this document, from this point forward, as he, the owner or in other similar forms of expression where the reference back to an owner/operator is evident.

Once attached to a common carrier's network, telephone handsets are constructed to interpret a specific signal transmitted over that network as a command to issue a noticeable, distinctive sound thereby notifying the telephone's owner that someone wishes to converse with him.

To determine who the calling party is the telephone's owner must remove a component of the handset, typically referred to as its receiver, from the handset's base, thereby placing the telephone in an off-hook condition. If the owner discovers, after responding to an incoming call, that he is not interested in speaking with the calling party then the owner typically takes whatever action he deems suitable to expedite the termination of the ensuing conversation, ultimately returning the telephone to an on-hook condition. Many owners regard this necessity of responding to unidentified callers as a potential source of anxiety, embarrassment, an annoyance or even an invasion of privacy and would, given the opportunity, prefer to know in advance of removing the receiver from the handset's base precisely who the calling party is.

I have found these emotional perturbations may be overcome by providing this advance knowledge to telephone owners by means of linking specific, and therefore identifiable, rings to pre-specified telephone numbers prior to receiving an incoming call, effectively limiting any conversations which might take place to those callers an owner will regard with warmth, affection or material interest.. Telephone utility corporations have attempted to resolve this same issue by providing a service variously known as call-display or caller-id. This response to the problem, however, requires the owner/operator to interrupt whatever activity he was engaged in prior to the incoming call and walk to the telephone handset to read the telephone number of the unidentified caller on a visual display device designed for this purpose. Many owners would find such an interruption itself to be annoying. And while owners who are deaf will not be able to make use of the solution embodied in this invention, people who are blind will be similarly deprived by the solution offered by the telephone utility corporations. It should be noted though that the invention also incorporates a visual display of the calling party's telephone number and that both the visual or tonal identification methods rely on the owner/operator having subscribed to the local telephone utility's caller-id service. Without such a subscription this invention still allows its owner to record and play back any desired sound in its memory bank as a simple substitute for the ring provided by the telephone handset's original manufacturer. In and of itself, however, this substitution provides relief from yet another emotional state commonly held to be undesirable, namely boredom.

In drawings which illustrate embodiments of the invention, Figure RING-001 is a schematic layout of the electronic circuit board which embodies the components necessary to: record and store any sounds the owner deems to be suitable telephone rings; detect an incoming telephone call; identify the number of the calling party (where the owner has subscribed to the telephone utility's caller-id service); play back any sound which is stored in the invention's memory; accept operational commands from the owner via a keypad interface; signal an LCD display to show any relevant operational or wait state information (eg. the identification number an owner has assigned to a specific ring), and; pass control to the telephone handset once the invention detects the owner has placed it in an off-hook condition so that a conversation may take place. Accompanying Figure RING-001 is a Bill of Materials which lists the component parts identified by reference labels on Figure 1: Component Layout. By itself, Figure 1 represents the bare printed circuit board upon which the components in the Bill of Materials will be mounted to realize the completed circuit board (known as RING-001). Figure 2: CASE - TOP VIEW is a depiction of what the invention will look like once housed in a plastic case with its keypad, LCD display and speaker grille installed. Figure 3: CASE - END VIEW shows the telephone handset and network carrier interfacings as well as a standard input capable of accepting analog information from a microphone or other sound generating equipment such as: a home stereo; a portable, transistor radio; a cassette tape player, or; a so-called sound-board mounted in a personal computer. To realize Figure 3: CASE -END VIEW one must orient the invention such that the LCD display is facing away from the individual holding the case, and then rotating the case one hundred and eighty degrees until the side originally furthest away is now the side closest to the individual performing the aforementioned rotation.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

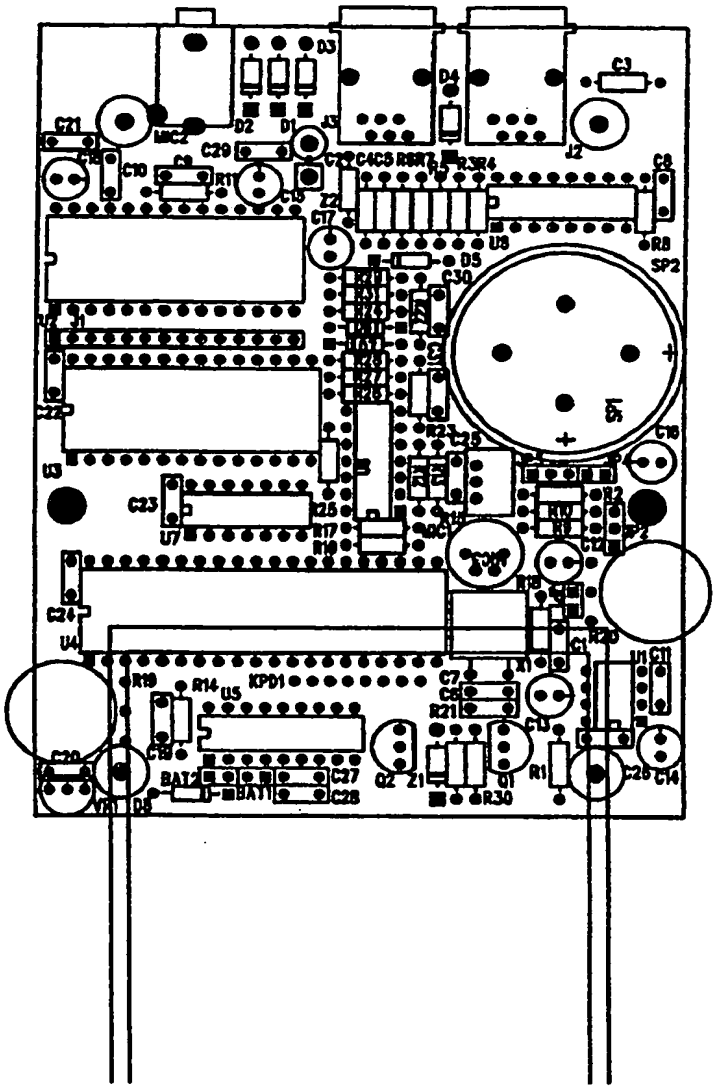
1 A programmable tool for extending the art of communication, specifically telecommunication, by virtue of providing a means other than direct speech or an idiosyncratic noise to positively identify a personality or the representative of an organization before any verbal contact takes place when such contact is attempted at such a distance as to preclude any other means of audible identification.

2 A programmable tool for extending the range of sounds with which a telephone handset may notify its owner/operator of an incoming telephone call by permitting any sound to be recorded, stored and played back at such time as an incoming telephone call is detected via the common carrier's telecommunication network.

3 A programmable tool for extending the duration of the sound, known as a ring, produced by a telephone handset when it detects an incoming telephone call to a length significantly greater than what continues to be, as of the date of this writing, the telecommunication industry's standard.

The programmable tool referred to in points 1, 2 and 3 above is comprised of an integrated circuit board, a keypad, an LCD display, an audio speaker, various interfacings, such software as is necessary to provide a means of operating the tool in such a way as to realize its stated functions and a case to contain all the foregoing elements.

FIG 1: COMPONENT LAYOUT



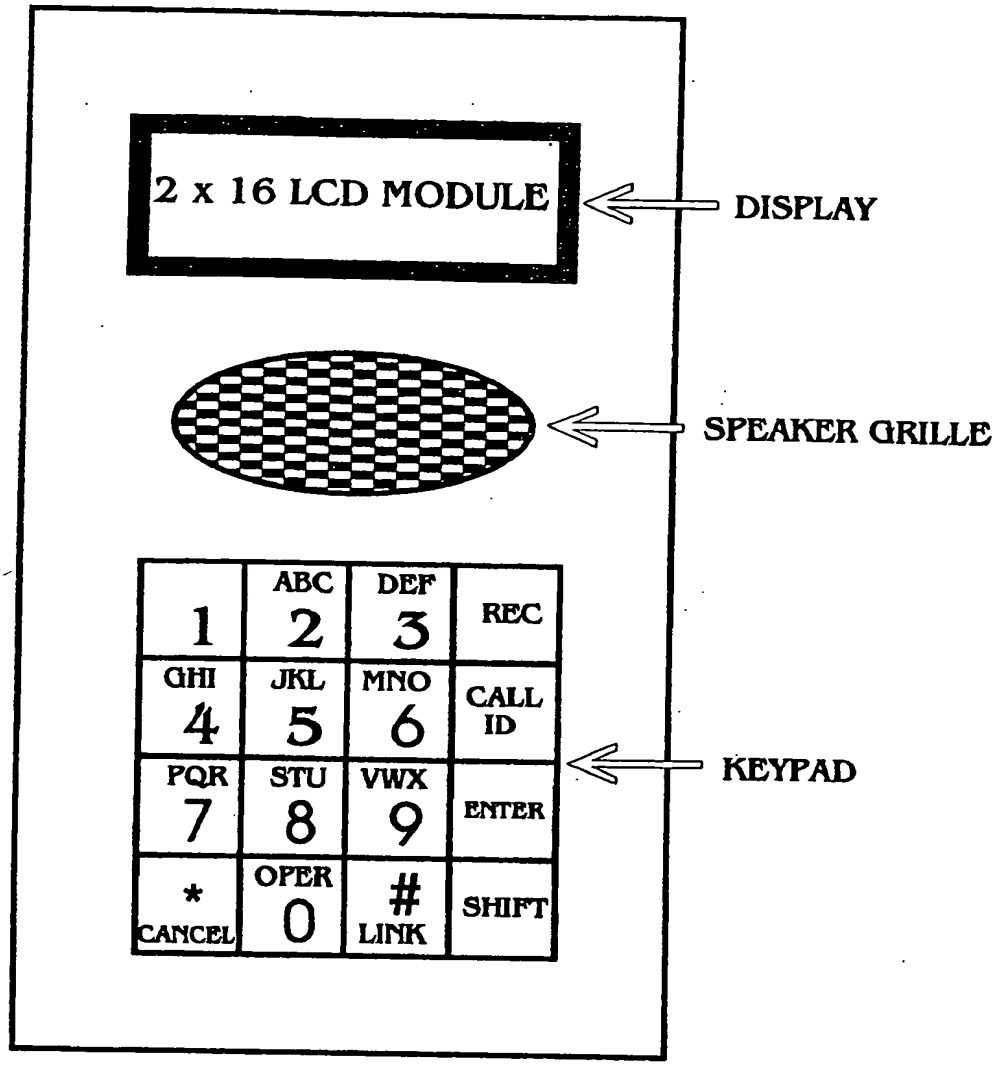


FIG. 2: CASE - TOP VIEW

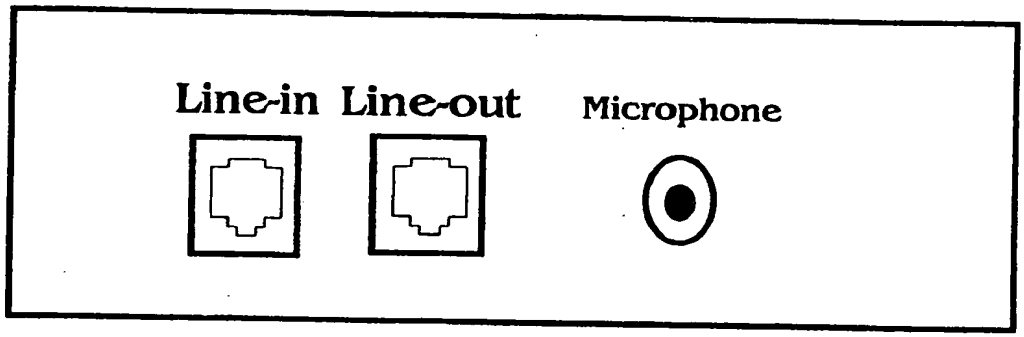
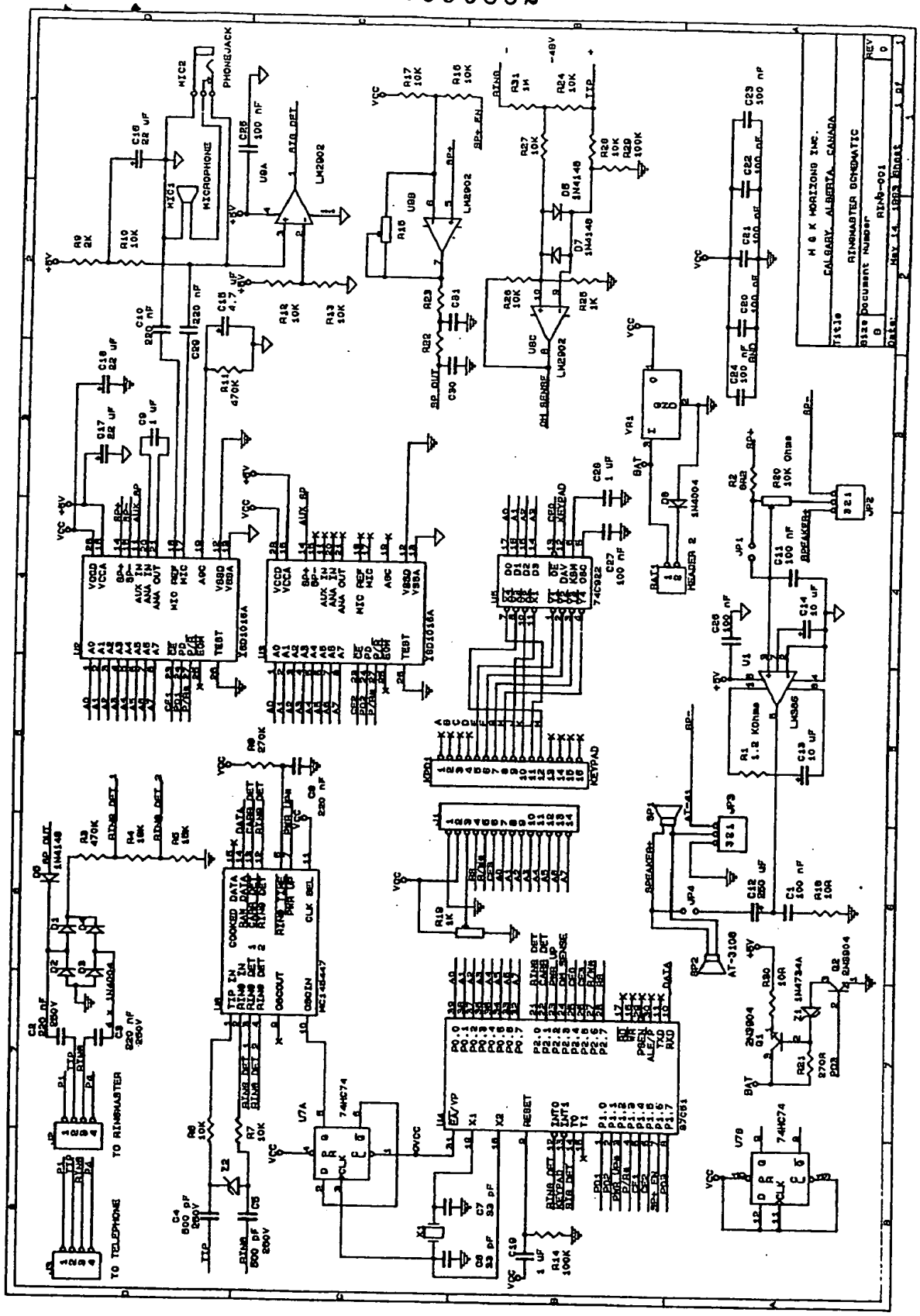


FIG. 3: CASE - END VIEW

RINGMASTER: Bill of Materials RING-001 Revision: 0 May 17/93

Item	Qty	Reference	Part
1	10	C1,C11,C20,C21,C22,C23,C24,C25,C26,C27	100 nF
2	2	C2,C3	220 nF 250V
3	2	C4,C5	500 pF 250V
4	2	C6,C7	33 pF
5	3	C8,C10,C29	220 nF
6	3	C9,C19,C28	1 uF
7	1	C12	250 uF
8	2	C13,C14	10 uF
9	1	C15	4.7 uF
10	3	C16,C17,C18	22 uF
11	1	J1	14 PIN HEADER
12	5	D1,D2,D3,D4,D8	1N4004
13	3	D5,D6,D7	1N4148
14	2	J2,J3	520250-2 (AMP)
15	1	KPD1	4X4 KEYPAD
16	1	MIC2	CJ-1013 JACK
17	2	Q1,Q2	2N3904
18	1	R1	1.2 KOhms
19	1	R2	8R2
20	2	R3,R11	470K
21	1	R4	18K
22	1	R5	15K
23	14	R6,R7,R10,R12,R13,R16,R17,R24,R26,R27,R28,R20,R22,R23	10K
24	1	R8	270K
25	1	R9	2K
26	2	R29,R14	100K
27	1	R15	10K POT
28	2	R30,R18	10R
29	1	R19	1K
30	1	R21	270R
31	1	R25	1K
32	1	R31	1M
33	1	SP1	68114 SPEAKER
34	1	U1	LM386
35	2	U2,U3	ISD1016A
36	1	U4	80C51
37	1	U5	74C922
38	1	U6	MC145447
39	1	U7	74HC74
40	1	U8	LM2902
41	1	VR1	78L05
42	1	X1	3.6864 MHz
43	1	Z1	1N4734A



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